

Draft Notes
Air Quality Working Group Meeting
8:30 – 4:00
May 25, 2005
3602 Inland Empire Blvd. Suite C-220
Ontario, California

Welcome and Introduction

J. Vrymoed, DWR, All

Chuck Keene will take John's place in managing AQ tasks for DWR (Chuck Keene, 770 Fairmont Ave, Glendale, CA 91203, Phone - 818-543-4620, chuckk@water.ca.gov.)

Today's meeting is to review work results. This is a working group meeting – not generally open to the public. Invited Mexican air quality agency representatives at the federal and local level, and provided translation services.

Emissions Inventory Development

Reyes Romero/ICAPCD

Overview of what is happening in Imperial County. Attainment plans, emissions inventories, regulatory development. PM10 is the focus.

In Sept 2004, EPA reclassified Imperial County from moderate to serious nonattainment for 24-hour PM10 standard. EPA also will assign a date for attainment demonstration. Must implement best available control measures (BACM) on all significant sources. Did not wait for EPA to assign attainment date, rather got started to understand what was contributing to 24-hour nonattainment. Must address impact of dust transport from Mexico, and dust from natural events (wind, wild fires). Must address impacts of local sources. Two-thirds of land in Imperial is desert land, barren land. Current inventory only includes PM10 from agricultural (ag) lands, but does not include barren land. Future inventory will include emissions from barren lands, and ag lands. Grant from EPA (2000, 2001). Hired Environ to do windblown dust inventory. ARB has reviewed and commented on this study. Table provides a summary.

Previous ARB inventory for 2000 had 172.8 ton/day for PM10 for fugitive windblown dust from ag sources, and nothing from barren lands. Environ used WRAP methods to include fugitive dust from barren lands. In Environ's 2002 inventory, agricultural sources remain a significant contributor (10.5 ton/day in 2002), but windblown dust from barren lands are 92% of the 2002 inventory (792 ton/day) developed by Environ. Overall, the county PM10 emissions inventory "increased" by 275%. ICAPCD will be meeting in July with ARB and EPA to "put all the cards on the table", as this is still very controversial. ARB did not think it was appropriate to make the very conservative assumption that all barren lands had the same emissivity. Environ estimates did not take into account crusting or other natural stabilizing factors. Other comments from ARB also related to assumptions made in the study.

Question – how did agricultural lands PM10 windblown dust emissions estimate decrease from 172.8 ton/day to 10.5 ton/day? Imperial County worked with Environ to refine assumptions for actual conditions in Imperial County. Double cropping and crops like alfalfa result in lower emissions, because lands are disturbed far less than assumed by ARB methods.

Attainment plan used monitoring data from 2001-2003. They monitored 18 violations of the 24-hr PM10 standard (150 micrograms per cubic meter [ug/m3]). 9 are clearly related to transport from Mexico. Other 9 violations were due to natural events. Late October fires accounted for 2 of the violations. Other 7 related to high wind events. Imperial County has not established a formal policy or definition of “high wind events”. High wind events may include 2-hr gusts of wind (30-40 mph), or longer term high winds.

Imperial County APCD has till August 2005 to come up with their natural event action plan for submittal to EPA. In order for ICAPCD to claim these “natural events”, and have them removed as violations, they must demonstrate that agricultural and other sources have BACM in place. ICAPCD planners are currently responding to comments from EPA and ARB.

Fugitive dust rules are being proposed by ICAPCD now. Not waiting for Plan development and approval. Shooting for Board rule adoption in August (public review starts next week – May 31 – June 2). ICAPCD will then submit regulations to ARB/EPA for SIP approval – that process may take rules. [Reyes to email draft rules]. Regulatory proposals include construction/demolition, handling of transport of bulk materials, carryout on paved roads, BACM for vacant lands, BACM for paved and unpaved roads, Conservation Management Practices (CMPs) for agricultural operations. Rules developed in collaboration, via an Advisory Committee, comprised of Farm Bureau, ARB, EPA, etc.

Draft Description of Air Quality Conditions under the No-Action Alternative L. Harnish/CH2M HILL

This is the first time this document has been issued to anyone outside DWR for review, so we asked for their comments and input prior to further release.

Laura briefed us using her presentation slides. All comments due to Chuck Keene by Friday June 10, 2005.

Acoustic survey, PM10/Met Correlations (wind characteristics), and Landsat Imagery Pat Chavez/USGS

Questar Tangent Corporation conducted the acoustic survey of the entire Sea floor for USGS/USBR (Karl Rhynas, Miquel Velasco, and Cheryl Rodriguez). Goal was preparation of a map showing characteristics of the sediments under the Sea, with information to predict the vulnerability of landscape to emit dust at any given location. Draft of report on acoustic work to be released internally to USGS in June, likely July to us. May be able to get the presentation he gave to us sooner.

Agrarian previously sampled sediments on transects around the Sea out to 15 feet in depth (800 samples), and extrapolated those data to 30 feet, to prepare soil classification maps of the Sea bed. To expand on this information, the acoustic survey measured 3 million discrete points of data on 3 km spacing. Wind erosion vulnerability map (i.e., vulnerability of landscape to wind erosion and dust generation). Two-frequency survey was used to show roughness and texture in detailed bathymetry maps and 3D images. USGS Flagstaff now

investigating the possibility of identifying pockets of deep soft mud. Mud areas may also indicate fines and lands that may be more vulnerable.

Will compare to actual sampling results from Agrarian; using these data for calibration and ground-truthing of the map that USGS Flagstaff is creating. Grab samples from Agrarian show that the low frequency data are well correlated, and USGS Flagstaff reports success in using acoustic survey to detect and map well-crustured areas covered with barnacles, shells, etc. Results indicated some ability to detect fine soils with high frequency data. USGS Flagstaff is using both types of data (high and low frequency) to create vulnerability maps. Southern parts of Sea appear to have more areas that may be vulnerable to wind erosion than the northern parts, although they both have areas that may be vulnerable.

This acoustic work does not predict salt crust formation.

Next presentation was on USGS studies of wind characteristics and implications to air quality in the Salton Sea area using data collected by ARB and CIMIS stations (Jana Ruhlman, Rian Bogle, and Cheryl Rodriguez). Study looked at wind and PM10 data from 3 ARB stations and 6 CIMIS stations (127, 128; then added 136, 141, 154, 180). Purpose of this study was to see if it was possible to use available wind data to predict areas vulnerable to wind erosion and dust generation. Attempting to correlate wind characteristics and PM10 monitoring data. PM10 data were limited to Indio Jackson monitoring site. Reyes indicated that other PM10 hourly data were available, and had been provided to Rian, so USGS will re-check data availability.

Used 2000 and 2002 wind speed and wind direction data (both were relatively dry years). Assumed that 2 meter wind data would be an indication of at least how windy it would be at 10 meters as winds would typically increase with height above surface. Pat presented histograms presenting wind directions for wind events exceeding 10 mph, and wind vectors for events exceeding 10 mph. Windier at the Sea than it is at Westmorland.

Pat discussed PM10 data from ARB Indio Jackson monitoring site. This site generally seemed less windy than others in the area. Wind speeds of 4 to 6 mph seem to correlate with the best air quality, perhaps because breezes push pollution out of the area, without stirring up dust. Higher PM10 without winds indicates sources of emissions other than fugitive windblown dust, or transport from windier areas.

How many days at each site had winds greater than 15 mph (hourly averages), and how many days with winds greater than 15 mph for over 3 hours. Niland and CIMIS 128 showed the most days (60 to 80 days/year).

Pat then provided data from Sensit instruments at Mojave regarding sand and particle movement, and how this is affected by wind, soil moisture, and vegetative cover or other stabilizing factors. USGS definition of "high wind events" is not formal, but rather is based on potential to generate local dust. USGS observed dust generation at wind speeds of approx 15 mph and higher.

TM1 and TM3 are potential wind erosion vulnerability maps. Identified unsheltered soils as an indication of vulnerable areas. Focus on an area west of Westmorland and an area on east shore of Sea as most "vulnerable".

Landsat data – only cover area every 10-15 days. Stand alone digital camera station at Franklin Dry Lake. Pat showed a movie showing results of collection of data every 5 minutes on March 14, 2005 to show dust generation from playa at Franklin Dry Lake, wind

speeds were 18-22 mph. Tomorrow they will fly an airborne digital camera to look at emissive areas – spatial variability over crusted/uncrusted areas.

Pat is now looking at Landsat images comparing calm clear days from hazy days to see if he can identify sources, hot spots, and compare to monitoring site locations. Monitoring sites may not be in the right locations to provide representative data.

3D image of the Sea developed using Acoustic Bathymetry, December 2004 – need to use the 3D glasses to see the bathymetry.

10-Meter Meteorological Towers

Sergio Fiero/DWR

DWR installing 10-meter towers at 3 existing locations, next to 2-meter CIMIS stations to allow correlations to be studied. Locations include SSW (127, right by marina, with a trimmed tree and restroom nearby), SSE (at Davis Road and Palm), and SSN (on Sea on top of restroom at Mecca Beach, 1/2 mile away from previous station 154). DWR wanted stations to be up and operation by Dec/Jan, but had challenges at some of the sites. Some of the stations are currently operational this month, but not currently connected for digital transmission of data. The stations can store data for 3 months, so they are hoping get this station and others installed and connected soon. Data will not be reported on CIMIS network, but rather will be emailed to us and posted on AQ ftp site.

Sediment testing

Steve Ziemer/SAIC

Steve briefed us using his presentation slides.

Playa Emissivity

John Dickey, Carrie MacDougall/CH2M HILL

John and Carrie briefed us using their presentation slides.

Wind Tunnel Testing

Mark Sweeney/DRI

We will post Mark's presentation on the ftp site.

Control Measures for Non-Playa Emissions

P. Vanderbilt/CH2M Hill

Pamela briefed us using her presentation slides.

Path Forward, Next Steps

Action Items

- 1) Reyes to email draft ICAPCD regulations to Pamela and Chuck, and will discuss at next meeting.
- 2) DWR requested that IID brief group at the next meeting regarding IID's activities related to AQ mitigation under the Joint Power Authority and the State Order, i.e., what are they doing now and what are their plans for the future?
- 3) John Dickey to get SSAQWG (SaltonAir) ftp site information to IID (as requested by Vickie).

- 4) Group to set time and agenda for next meeting(s). Sometime after the 4th of July. What do the air districts and ARB want to see?
 - Reyes for ICAQMD -- Extent of emissions that will be associated with the ERP alternatives. What specific control measures are we planning to apply?
 - Steve Smith for SCAQMD -- What specifics can we provide with respect to emissions sources, emissions estimation methods, and emissions control measures? Come visit with their technology advancement office and other experts at SCAQMD. SCAQMD will look for detail to the extent we can provide it with respect to growth projections, construction phasing, etc. We are supposed to have alternatives in the June timeframe. A goal for the July meeting would be to provide the lists of information needs that we are forwarding to the engineers and some of our preliminary assumptions regarding sources, schedules, controls, etc., going into the PEIR emissions calculations.
 - Elliot Mulberg for ARB -- Interested in information that will come in from the 10-meter meteorological towers. Also interested in methods for reviewing the alternatives, and perhaps criteria for reducing the number of alternatives on the basis of air quality issues.
- 5) Comments on the 4 documents we handed out within the next 2 weeks (by COB June 10). Please send comments to Pamela (pvanderb@ch2m.com) and Chuck (chuckk@water.ca.gov).
- 6) Steve Long/CH: send exact sample locations to DRI so that they can try and co-locate wind tunnel testing with sites where soil/sediment sampling took place. We think that several sampling sites were located so that they would correspond with DRI's planned tests.
- 7) Carrie MacDougall/CH: Send Midwest Research Institute methods to DRI for PM 2.5 vs. 10 split.
- 8) CH presenters: Clarify terminology – “consistency” with air quality plans as required under CEQA and “conformity” with SIPs under CAA General Conformity requirements
- 9) Chuck to check with State Lands Commission regarding review and consensus on dust control measures.
- 10) Reyes reminded us that any methods selected for PM10 control must meet requirements for BACM (serious PM10 nonattainment status in the area), and ideally be proven.
- 11) Vickie to check on facilitation of DRI access to IID and associated private lands for PI-SWERL and/or wind tunnel tests.
- 12) Doug Barnum/SSSO to check on a BLM contact for DRI to obtain access to BLM lands for PI-SWERL and/or wind tunnel tests.
- 13) DRI may also need assistance obtaining access to Tribal lands. Chuck to check with Debbie at Torres-Martinez Tribe.
- 14) Dickey to communicate crust taxonomy methodology used at Owens to DRI.

- 15) DWR may consider additional DRI work at other playas, for example, Laguna Salada.
- 16) Doug Barnum asked for input on ideas for projects to use the \$100,000 set aside by Congressional allocation for air quality mitigation. Ideas discussed at the meeting included studies of salt crust formation, influence of groundwater on crust behavior, wind tunnel tests, study of vegetative species that may work in emissions control. Chuck and Pamela to coordinate and respond.
- 17) Doug Barnum also asked for input on the future needs for continued effort on the acoustic survey work conducted by Pat Chavez/USGS/Flagstaff. May need more ground-truthing of areas they showed were crusted with shells, etc. in the south Sea area, for example.